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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,385

01/05/2006

Jun Li

PU030023

3002

24498

7590

08/03/2006

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PATENT OPERATIONS
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EXAMINER

BRANDT, CHRISTOPHER M

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/563,385

Applicant(s)

LI ET AL.

Examiner

Christopher M. Brandt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/5/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement submitted on August 19, 2005 have been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by **Hunt et al.** (US PG PUB 2003/0013452 A1).

Consider **claim 1**. Hunt et al. clearly show and disclose a method for achieving a hierarchical cellular radio communication system, which comprises a plurality of pico cells 106 (figure 2) and an umbrella macro cell 102 (figure 2). The pico cell 102 is capable of voice telephony and data communications with a Mobile Station 110 (figure 2) using a sub-channel 212 (figure 2). In addition, the pico cells 106 passes data across a sub-channel 214 (figure 2) to a terminal 110 (figure 2) dedicated for higher data rates. Moreover, there is a communication channel between the secondary station and a primary station, which comprises control and data sub-channels for the respective transmission of control information and user data. This

communication channel also provides a means for a data sub-channel between the secondary station and controlling primary station for the pico cell (abstract, paragraphs 4-5, 10, and 23, read as a method for achieving wireless communications in a network having at least one macro cell for communicating both voice and data with a mobile communications device across a first wireless link and, at least one micro cell, with a smaller coverage area and higher capacity per user than the macro cell, for communicating data with the mobile communications device across a second wireless communication link, the method comprising the steps of: communicating signaling information between the one micro cell and the one macro cell via a third wireless channel in response access of the micro cell by the mobile communications device; and controlling the operation of the micro cell responsive to the signaling information).

Consider **claim 2** and **as applied to claim 1**. Hunt et al. teach the method where the user requires transmission from one cell 106 (pico cell, figure 2). In addition, the MS 110 (figure 2) scans the broadcast channels of the pico cellular network and signal quality measurements relating to each pico cell. This provides “managing access” in order for the macro cell BS 104 (figure 2) to determine a suitable pico cell 106 (paragraphs 25, 29, 30, read as the method according to claim 1 wherein step of controlling the micro cell includes the step of managing access to the micro cell by the mobile communications device).

Consider **claim 3** and **as applied to claim 1**. Hunt et al. show and disclose the method for arranging the radio access network within a hierarchical cell structure and allowing a communications link to be split between two types of cells, such that control data is passed over a control sub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2) (paragraph 23, read as the method according to claim 1 wherein step of communicating

signaling information via the third wireless channel includes the step communicating signaling information from each mobile communication device separately).

Consider **claim 4** and **as applied to claim 1**. Hunt et al. clearly show and disclose the method where control data / user data / control information that is sent in packets through a communication link that is split between two types of cells, such that control data is passed over a control sub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2) controlling a macro cell 102 (figure 2) (paragraph 23, read as the method according to claim 1 wherein the step of communicating signaling information via the third wireless channel includes the step of encapsulating signaling information from a plurality of mobile communication devices in a common packet).

Consider **claim 5** and **as applied to claim 1**. Hunt et al. teach the method where control data / control information (e.g. in support of fast physical layer procedures, such as power control) can be sent to the Mobile Station MS 110 (figure 2) by arranging the radio access network within a hierarchical cell structure and allowing a communications link to be split between two types of cells, such that control data is passed over a control sub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2) (paragraph 22-23, and 26, read as the method according to claim 1 further comprising the step of assigning to the mobile communication device codes and power settings to enable the mobile communication device to communicate with macro cell and micro cell simultaneously).

Consider **claim 6**. Hunt et al. clearly show and disclose a system for achieving a hierarchical cellular radio communication, which comprises a plurality of pico cells 106 (figure 2) and an umbrella macro cell 102 (figure 2). The pico cell 102 is capable of voice telephony

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and data communications with a Mobile Station 110 (figure 2) using a sub-channel 212 (figure 2). In addition, the pico cells 106 passes data across a sub-channel 214 (figure 2) to a terminal 110 (figure 2) dedicated for higher data rates. There is a BS 104 (figure 2, read as control element), which controls a macro cell 102. Moreover, there is a communication channel between the secondary station and a primary station, which comprises control and data sub-channels for the respective transmission of control information and user data. This communication channel also provides a means for a data sub-channel between the secondary station and controlling primary station for the pico cell (abstract, paragraphs 4-5, 10, and 23, read as a wireless communications system, comprising: at least one macro cell for communicating both voice and data with a mobile communications device across a first wireless link at least one micro cell having a smaller coverage and higher capacity per user than the macro cell for communicating data with the mobile communications device across a second wireless communication link; a control element for controlling at least the operation of the macro cell; a third wireless channel for communicating signaling information between the one micro cell and the one macro cell via in response access of the micro cell by the mobile communications device to enable the controller to also control the operation of the macro cell).

Consider **claim 8** and **as applied to claim 6**. Hunt et al. teach the system where the user requires transmission from one cell 106 (pico cell, figure 2). In addition, the MS 110 (figure 2) scans the broadcast channels of the pico cellular network and signal quality measurements relating to each pico cell. This provides “managing access” in order for the macro cell BS 104 (figure 2) to determine a suitable pico cell 106 (paragraphs 25, 29, 30, read as the system

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according to claim 6 wherein the control element manages access to the micro cell by the mobile communications device).

Consider **claim 9** and **as applied to claim 6**. Hunt et al. show and disclose the system for arranging the radio access network within a hierarchical cell structure and allowing a communications link to be split between two types of cells, such that control data is passed over a control stub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2)(paragraph 23, read as the system according to claim 6 wherein each micro cell separately communicates signaling information from each mobile communication device across the third wireless channel).

Consider **claim 10** and **as applied to claim 6**. Hunt et al. clearly show and disclose the system where control data / user data / control information that is sent in packets through a communication link that is split between two types of cells, such that control data is passed over a control stub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2) controlling a macro cell 102 (figure 2) (paragraph 23, read as the system according to claim 6 wherein the signaling information of each of a plurality of micro cells is encapsulated into a common packet for communication across the third wireless communication channel).

Consider **claim 11** and **as applied to claim 6**. Hunt et al. teach the system where control data / control information (e.g. in support of fast physical layer procedures, such as power control) can be sent to the Mobile Station MS 110 (figure 2) by arranging the radio access network within a hierarchical cell structure and allowing a communications link to be split between two types of cells, such that control data is passed over a control stub-channel 212 (figure 2) between a terminal 110 (figure 2) and a BS 104 (figure 2)(paragraph 22-23, and 26,

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read as the system according to claim 6 wherein the control element assigns to the mobile communication device codes and power settings to enable the mobile communication device to communicate with macro cell and micro cell simultaneously).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hunt et al. (US PG PUB 2003/0013452 A1)** in view of **Westerberg (Patent Number 6,058,302)**.

Consider **claim 7** and **as applied to claim 6**. Hunt et al. clearly show and disclose the claimed invention except wherein the control element comprises a Serving General Packet Radio Service Node (SGSN).

However, Westerberg teaches a system where the public (GPRS) network 100 (figure 2) includes a mobile services switching center/serving GPRS support node (MSC/SGSN) 102 (figure 2), which controls calls to and from other telephony and data communications systems (column 4 lines 27-47, read as the system according to claim 6 wherein the control element comprises a Serving General Packet Radio Service Node (SGSN)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Westerberg into the system of Hunt et al. in order to provided stability during high load in large networks.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hunt et al. (US PG PUB 2003/0013452 A1)** in view of **Westerberg (Patent Number 6,058,302)**, and further in view of **Horneman et al. (Patent Number 6,959,048 A1)**.

Consider **claim 12** and **as applied to claim 7**. Hunt et al. and Westerberg teach the claimed invention except wherein the control element further comprises: a Gateway General Packet Radio Service Serving Node (GGSN); and an Internet Protocol tunnel for linking the GGSN to an Internet Protocol gateway.

However, Horneman et al. clearly show and disclose a gateway node (GGSN = Gateway GPRS Support Node) 144 (figure 1B). This gateway node 144 connects the packet transmission

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network 142 (figure 1B) and a public packet transmission network 146 (figure 1B). In addition, an Internet protocol can be used at the interface (column 5 lines 62 – column 6 lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Horneman et al. into the systems of Hunt et al. and Westerberg in order to optimize “bursty” data services such as wireless Internet/intranet and multimedia services.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098. The Examiner can normally be reached on Monday-Friday from 8:00am to 4:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner’s supervisor, Rafael Perez-Gutierrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Christopher M. Brandt
C.M.B./cmb

July 18, 2006

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PATENT EXAMINER/TELECOMM.

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